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| Author(s) Name | Kh. Abdul Maleque | | |
| Contact Email(s) | maleque@aiub.edu | | |
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| Abstract |  |
| A similarity solution of a binary chemical reaction on MHD unsteady non-Newtonian Casson fluid flow with heat and mass transfer past a flat porous plate is investigated. The effects of Casson parameter on the velocity profiles for both cooling and heating problems are studied and we also study the effects of exothermic/endothermic chemical reaction rate and Arrhenius activation energy on the temperature and concentration respectively in this paper. The governing partial differential equations are reduced to ordinary differential equations by introducing locally similarity transformation [Maleque (2010)]. Numerical solutions to the reduced non-linear similarity equations are then obtained by adopting six orderd implicit Runge-Kutta and shooting method using the Nachtsheim-Swigert iteration technique. The results of the numerical solution are then presented graphically in the form of velocity, temperature and concentration profiles. The corresponding skin friction coefficient, the Nusselt number and the Sherwood number are also calculated and displayed in table showing the effects of various parameters on them. | |